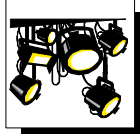


Maintaining Historic Building Exteriors



May 2006



Agenda

I. Introduction

Maintenance is Preservation

Common Terms

FMSS Background

II. Preservation Maintenance Principles

Regular upkeep

Retain historic materials

Preserve historic character

Address deterioration first

Use traditional repair methods

Use gentlest means possible for cleaning

III. Maintenance Plans, Schedules, Inspections

- Survey Building
- Identify Materials
- Identify Areas of Concern
- Research Treatment Methods
- Read Preservation Briefs
- Write up steps for treatments; Keep logbook

BREAK with Class Exercise #1

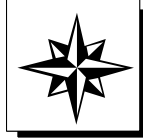
IV. Maintenance of Building Zones: Roof to Grade

- Roofing, Chimneys, Gutters
- Exterior Walls
- Windows
- Porches and Projections
- Foundations and Grade

BREAK with Class Exercise #2

V. Maintenance Tips

- Common Maintenance Mistakes
- Maintenance Tips



Course Overview

During this TELNPS course, participants will be introduced to various activities and techniques that should be performed to preserve the exterior of a historic building. Teaching methods for this class will include lecture accompanied by PowerPoint slides, class exercises, and question/answer sessions. Interaction from class participants with the instructors is encouraged.

How to Interact with the Instructor

If you were physically in the classroom with the instructor, you would raise your hand to let her/him know you had a question or comment. Then you would wait for the instructor to recognize you and ask for your question.

With TELNPS courses there is also a "protocol" to follow to ensure that you can easily ask questions and others can participate as well.

As part of the TEL station equipment at your location, there are several push-to talk microphones. When you have a question, press and hold down the push-to-talk button, maintaining a distance of **12-18 inches** from the microphone, wait a second and then ask you question or make your comment. It would sound something like this:

Excuse me [instructor's first name], this is [your first name] at [your location]. I have a question (or I have a comment)." Then release the push-to-talk button. This is important because until you release the button, you will not be able to hear the instructor. The instructor will acknowledge you and then ask for your question or comment. Stating your name and location not only helps the instructor, but also helps other students who are participating at different locations to get to know their classmates.

Audience

Maintaining Historic Building Exteriors is designed for all employees involved in the preservation and maintenance of historic buildings

Instructor

The course instructors are H. Thomas McGrath, Jr., FAIA, Superintendent of the Historic Preservation Center in Frederick, Maryland and Sharon C. Park, FAIA, Supervisory Historical Architect for Heritage Preservation Services in the Washington D.C. office

Timing

Maintaining Historic Building Exteriors will be broadcast via the TEL (Technology Enhanced Learning) network on Tuesday, May 16, 2006 from 1:00 PM to 4:00 PM EST.



Learning Objectives

COURSE OVERVIEW

Routine exterior building maintenance is the most cost effective method of preserving a building. As soon as a building is constructed, restored, or rehabilitated, it needs to be physically cared for on a regular recurring basis to slow the natural process of deterioration.

During this three hour event, participants will be introduced to various activities and techniques that should be performed to preserve the exterior of a historic building. Frequent references will be made to the *draft Preservation Briefs on Maintaining Historic Building Exteriors*. The instructors welcome feedback on this draft document, particularly in terms of which exterior building maintenance techniques work for parks.

Participants will also conduct two class exercises that refer to the pre-course assignment.

LEARNING OBJECTIVES

After completing this course, participants will be able to:

- Identify the most important parts of a historic building that should be maintained.
- Define terms such as, "routine maintenance, housekeeping, preventive maintenance".
- Describe at least one preservation maintenance principle.
- Demonstrate awareness of the preservation treatment guidance contained in the *Preservation Brief* series of publications.
- Identify typical tasks that should be performed to maintain historic buildings.
- List several techniques/tips that can be used to maintain the exterior of historic buildings.



Introduction

Maintenance is Preservation

The maintenance objective is to make the historic fabric of a building last as long as possible. Maintenance has preservation as its goal.

Common Terms

- Housekeeping
- Routine
- Cyclical or Preventive Maintenance

[See page 1 of draft Preservation Briefs](#)

Work Type	Sub-Work Type	Definition	Examples	Current Fund Source(s)
Facility Operations	Operations	Work activities performed on a recurring basis throughout the year which intend to meet routine, daily park operational needs.	Janitorial and custodial services, snow removal, operation or purchase of utilities (water, sewer, and electricity), grounds keeping, etc.	NPS Base
	Regular/Recurring Maintenance	Work activities that recur based on normal wear patterns on a periodic cycle of greater than 1 year and less than 10 years.	Painting, caulking, sealing, carpet replacements, etc.	
Facility Maintenance	Preventive Maintenance	Regularly scheduled periodic maintenance activities (within a year) on selected equipment.	Inspection, lubrication, and minor adjustment	NPS Base, Cydic, Repair/Rehab, Line Item Construction, Fee Demo
	Deferred Maintenance	Maintenance that was not performed when it should have been or was scheduled to be which, therefore, is put off or delayed. Continued deferment of maintenance will result in deficiencies. (DOI, FMAR 2/98)	Deficiencies that are a result of unaccomplished past maintenance, repairs, and replacements	
	Component Renewal (also known as Recapitalization)	The planned replacement of a component or system that will reach the end of its useful life based on condition and life cycle analysis within the facility's lifetime.	Roof systems, utility components, pavement, and other major dynamic equipment	

FMSS Background

Facility Management Software System (FMSS) is the NPS program that implements industry standard asset management practices and new, more effective software tools to properly identify, maintain, and repair the expanding portfolio of assets that fall under NPS stewardship.

FMSS capabilities include:

Asset and feature data as well as scheduling of recurring maintenance and work planning, tracking and evaluation.

- NPS uses the Asset Priority Index (API) and the Facility Condition Index (FCI) to assist in determining project priorities for facility maintenance to improve the condition of high priority facilities, including instituting performance measurements to monitor progress in addressing reduction of the deferred maintenance backlog.
- Annual condition assessments in all park units.
- Records inventory information on critical components of high priority assets.
- Generate preventive maintenance plans (PMs).

For Additional FMSS Information Visit:

FMSS website:

<http://pfmd2.nps.gov/FMP/fmss/>

FMP home page:

<http://inside.nps.gov/waso/waso.cfm?prg=155&lv=3>

Go to: *Condition Assessment Inspection Guidance*

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Preservation Maintenance Principles

Regular upkeep

Retain historic materials

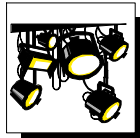
Preserve historic character

Address deterioration first

Use traditional repair methods

Use gentlest means possible for cleaning

[See page 2 of Draft Preservation Briefs](#)



Maintenance Plans, Schedules, Inspections

Survey building

- Photograph each façade
- Make elevations or plans
- Once a year walk around; clockwise
- Mark up blank elevations with notes
- Check exterior after storms as well as attics and basements
- Schedule work for climate conditions

Identify materials

- Roofing/ gutters
- Exterior walls
- Windows/doors
- Porches/projections
- Foundations/grade

Capture your notes here



Identify areas of concern

- Broken, cracked
- Bulging, sagging
- Moist, damp, rotted
- Slipped, dislodged
- Warped, rusted
- Worn out materials

Research treatment methods

- Gentle/low pressure cleaning methods
- Mortar compounds
- Sealants/caulks/adhesives
- Proper surface preparation
- Safety requirements

Read Preservation Briefs

See DRAFT 95% Preservation Briefs (5/06 not ready for publication; only internal review) *Maintaining Historic Building Exteriors; the small to medium sized property*

Write up steps for treatment; Keep Logbook

- Names of Contractors/suppliers
- Names of commercial products/paints
- Step by step instructions for cleaning, etc.
- Work orders of completed work/bills
- Cut sheets on maintenance treatments

[See pages 3-5 of Draft Preservation Briefs](#)

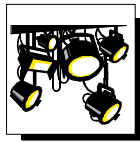
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Break and Class Exercise #1

Exercise #1 Instructions:

- Compare the first four pre-course work tasks.
- Select what you think is the best representative historic building.
- Select a spokesperson to represent the group and be prepared after the break to discuss what the most critical preservation maintenance task is at this structure.
- Be prepared to offer reasons to support your selections.
- Is your selection in alignment with the FMSS data you obtained?



Maintenance of Building Zones: Roof to Grade

Roofing, Chimneys, Gutters

- Keeping gutters clean is the most important semi-annual task; this one story section is easy to reach. Power-washing of roofs will dislodge tiles/shingles.
- Don't let your roof deteriorate to the point that you can't afford an appropriate replacement.

Exterior Walls

- Clean and prepare surfaces for appropriate treatment or finish; Use garden hose washing for a first step; repoint masonry or sand/repaint wood next.
- Catch deterioration before it spreads.
- Don't repoint with too hard a mortar and don't paint with waterproof paint which can trap moisture and cause spalling in cold climates.

Windows

- Regular washing, cleaning & repair are important.
- Wood may need painting every 5-7 years depending on exposure. Careful prep work and the best materials will extend the life of the paint job.
- Replacing a broken glass or reglazing with new compound can save a historic window.

Porches and Projections

- Be familiar with traditional cleaning methods and products. Do not polish metal intended to retain a patinated/weathered finish. If using chemicals, make sure they don't affect adjacent surfaces.
- Check for birds' nests, rodents and other invasive elements, such as vines, that can accelerate deterioration
- Preparation is key to a lasting repainting job. For metal, remove rust and use a primer with two top coats.

Foundations and Grade

- Correct areas where moisture or mold are accumulating and causing foundation damage.
- Redirecting downspout run-off away from the foundation helps to keep a dry basement or crawl space.

[See pages 6-14 of Draft Preservation Briefs](#)

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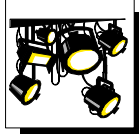


Break and Class Exercise #2

Exercise #2 Instructions:

Instructors will now ask:

- Did anyone in the group select, print, and bring a *Preservation Brief* to this session? Select a new group spokesperson that is prepared to respond to the above questions. After the break.
- Is the complete set available in your park library or with a park staff member?
- Has anyone in your group ever referred to these documents for guidance when completing an exterior preservation maintenance task?
- Give an example where the *Preservation Brief* you selected for this class exercise provided useful guidance and information.



Maintenance Tips

Common Maintenance Mistakes

- Aggressive use of power washers, harsh chemicals, abrasive cleaners or weed whacker filaments
- Use of goop or poor surface preparation
- Sealing surfaces, using elastomeric paints or hard mortars to control moisture
- Using synthetic siding/windows to “eliminate” maintenance
- Using chlorides/salt for ice melting
- Aggressive use of power washers, harsh chemicals, abrasive cleaners or weed whacker filaments

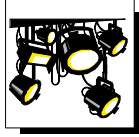
Maintenance Tips

- Keep up with schedules; stitch in time saves 9
- Don't use band aid solutions
- Do no harm to finishes
- Keep historic materials as long as possible
- If replacement is necessary, retain historic character of original and material if possible

[See pages 4 and 15-16 of Draft Preservation Briefs](#)

Capture your notes here





Closing Remarks and Course Credit

References

Websites

FMSS

FMSS website:

<http://pfmd2.nps.gov/FMP/fmss/>

FMP home page:

<http://inside.nps.gov/waso/waso.cfm?prg=155&lv=3>

Cultural Resources

www.cr.nps.gov/hps/tps/briefs/presbhom.htm

www.cr.nps.gov/hps/tps/technotes/tnhome.htm

www.cr.nps.gov/linkpubs.htm

Historic Preservation Training Center

<http://www.nps.gov/training/HPTC/HPTC.html>

To Receive Credit for this Course

1. PRINT your name on the attendance roster.
2. UPON RECEIPT OF E-MAIL NOTIFICATION, complete the online course evaluation.